ERISA is designed to safeguard employees' pension rights

For pension planners, ERISA has been the password for the past eight years, since the Employee Retirement Income Security Act (ERISA) was passed. Created in reaction to well-publicized abuses of pension rights—employees fired a day or week before becoming eligible to draw pensions, for example, or companies folding and leaving no assets to pay pension obligations—ERISA set out to safeguard the pension rights of employees by ensuring that companies strengthen the funding of and liberalize rights of participation in their pension plans.

Employee-benefits lawyers and pension-plan administrators probably aren't overstating the case when they call ERISA "incredibly complex." As one such attorney puts it, "It created my job overnight." Grossly simplified, however, ERISA boils down to four major points:

- Employee vesting.
- Employers' fiduciary responsibility.
- Pension-plan disclosure.
- Creation of Pension Benefit Guaranty Corp. (PBGC).

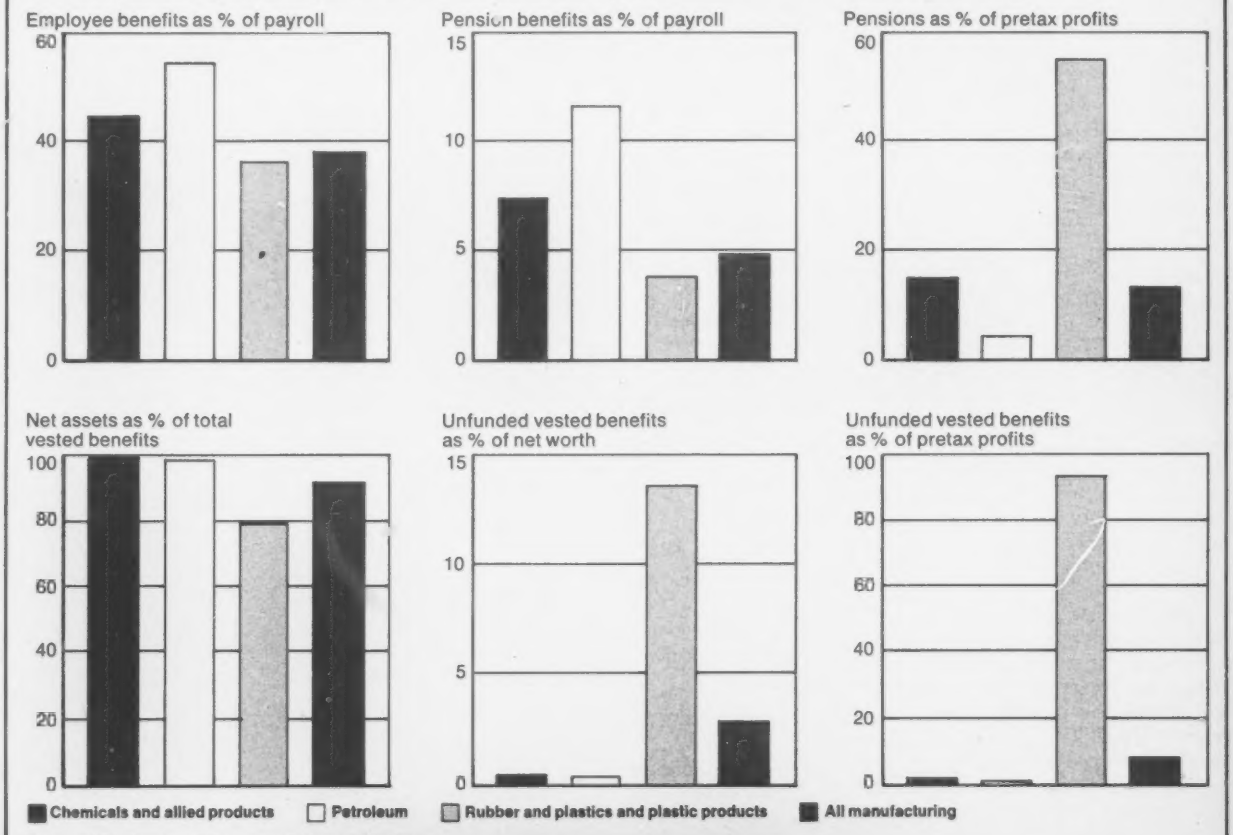
Under the employee vesting provisions of ERISA, there are three basic forms of vesting. The first, a "cliff-10," provides for no vesting up to 10 years of service, after which the employee must be 100% vested. The second, a graduated vesting program, provides 25% after five years of service, increasing 5% per year for the next five years and 10% for the next five years—that is, 50% vesting after 10 years, and 100% after 15 years. The third method, called the rule of 45, gives an employee 50% vested interest after either 10 years of service or when the combination of years of service (a minimum of five) and the employee's age totals 45. After that, the employee's vesting increases 10% per year for the next five years to reach full vesting.

Under ERISA, a person administering a pension plan must act, as a fiduciary, solely in the interest of the plan participants and beneficiaries. He or she must use the diligence and care that a "prudent person" would use, diversifying investment portfolios, for example, to minimize the risk of all-in-one-basket losses, unless it would be clearly imprudent to do so. Both the corporation sponsoring the plan, and the plan administrator, personally, are responsible for pension plan performance under this provision.

Also as part of their duties, plan administrators must ensure plan disclosure to two groups: to the participants, and to the federal government. Plan participants, for example, must be given a summary description of the plan, its amendments and annual report, and a statement of benefits. Similar but expanded data must be provided to various government agencies.

One of the major government agencies involved is PBGC, created by ERISA as a sort of insurance program to guard against pension-plan failures. It was designed to fund a company's pension

Chemical companies' pension outlays are higher than for all manufacturing



Sources: U.S. Chamber of Commerce, Johnson & Higgins

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plan in the event that the economy went bankrupt, from funds kicked in by all companies covered by ERISA. The initial premium was 50 cents per employee. Even industry plan managers agree that amount was woefully inadequate, so the premium was kicked up to $2.60 per employee. That level, too, is probably low for building from scratch a pool of funds to cover potential plan failures. But because there is little or no experience on what the costs should be, there is little agreement on what the new premium should be. PBGC, for example, is pushing for a $6.00 rate; industry wants something less than that.

And both sides to the argument—industry and PBGC—are fearful of what would happen to premiums if the courts decide, in several cases under way, that PBGC must take over and fund pension plans of companies which had unfunded pension-plan obligations and then terminated the plans. Such a burden falling on PBGC could cause premiums to skyrocket.

life that eventually will be paid back as pensions. And if that is so, argue consumer activists, why should there be any vesting time at all? This point, which was made by at least one Presidential commission on pensions (appointed by Carter, disavowed by Reagan), is a spur toward gradually shortened times. Or pensions should be made portable, the argument continues, with pension rights transferable from one company to another, which they now are not.

For workers at a small company, it's probably a tossup as to whether the company has a pension plan. Those that have must live with the dictates of ERISA, or, also under its provisions, terminate the plan. For a small company with a young workforce, in particular, plans other than a pension plan can offer even more to an employee, besides saving the company the hefty costs associated with ERISA regulations and compliance. Alternatives could be a profit-sharing plan, or company-encouraged individual retirement accounts (IRAs), or salary-reduction savings programs.

In some cases, if a company is having financial difficulties, termination of a pension plan could mean the difference between folding and continuing; the funds that would be put into the plan could be used, instead, as working capital. One method of innovative termination could entail terminating the plan, buying employees annuities bearing a high interest rate as a replacement, then using excess cash for daily business operations. At any rate, for a small company starting up—or even one already in business—"It's foolish to set up a pension plan these days," one employee-benefits attorney says.

Ironically, small companies may benefit in the long run from pension legislation such as ERISA, some plan managers believe. With the pool of pension funds so high, there may, in the short run, be some concentrating of investment funds in large corporations. Rather like Markovnikov addition, big bucks flock where big bucks have gone before. Managers used to dealing with large sums from large pension plans might feel more comfortable investing in large companies.

However, ERISA directs plan managers to diversify portfolios whenever it is prudent to do so. And in a world of high inflation, managers will seek to maximize their return on investment while maintaining safety. For them, the larger the bulk of the cushion from conservative secured investments, the more—10% of a total fund, perhaps—can be put into more speculative but faster-growing investments such as real estate, metals, or even such oddities as fine artworks.

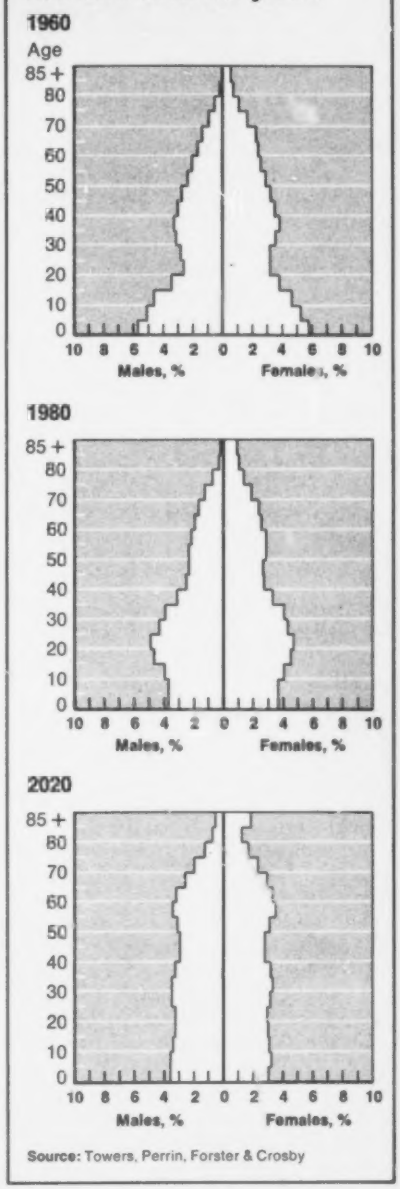
If the question of funding investments runs into the long term, what about pensions themselves? Although pensions in the chemical industry are sound today, what will they be like in 20 years? Or in 30 years? Pension-plan administrators claim no access to a crystal ball. At least one manager questions the wisdom of spending too much time worrying about variables no one can control or foresee—possible changes in the birthrate, for example, or a dramatic cure for cancer that raises the average life span.

Nevertheless, as the post-World War II baby crop matures, America is becoming grayer. Just earlier this month, for instance, the U.S. Census Bureau reported that the median age rose to 30.3 years in July 1981, up from 30 years in July 1980, and from 27.9 years in April 1970. During that 11-year span, the number of people in the 18-to-34 age group increased nearly 40%, to 69.4 million, and the 65-and-over group grew 13.4% to 26.3 million. On the other hand, the 5- to 13-year-old group declined 16.4%, to 36.7 million.

That sets up a basic conflict in the entire pension picture: the short-term attempts of companies to induce older workers to take early retirement, to cut payroll costs, and open career paths for younger workers, versus longer-range increasing costs to pension systems amid increasing concern about the soundness of the entire social security system. As the pool of workers funding social security shrinks, that will put more and more pressure on private pensions as a source of livable income.

Despite the options opened up by passage of age-discrimination laws, there is a clear trend among workers to retire earlier. Part of that is due to the liberalization of many large-

Age distribution will even out over next 40 years



Source: Towers, Perrin, Forster & Crosby

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Salary-reduction plans are gaining popularity

Either as a complement to company-sponsored pension programs, or as an option for companies with none, salary-reduction plans are the latest hot topic for employee-benefits managers. Final regulations are not yet out on such plans, but proposed regulations, issued last November by the Internal Revenue Service, have gained chemical companies' interest.

Under the proposed regulations, salary-reduction plans—also known as 401 (k) plans for the IRS code section of that number—enable an employee to divert some of his or her salary into a long-term savings program before it is taxed, up to 10% of pretax salary each year. Because the salary or wages are trimmed on a pretax basis, the income bracket is lowered and the employee pays lower income taxes. Meanwhile, other benefits—medical coverage, life insurance, and so on—are calculated on the basis of the total pretax income, thus the program has some benefits for the corporation, too. It pays social security tax on the new "reduced" salary or wages paid out, so it pays less.

The money is taxed eventually, of course. But when it is, either when the employee reaches the age of 59½ or when the employee must withdraw it for hardship purposes, the contributions withdrawn are eligible for a favorable 10-year averaging tax treatment.

Ironically, such savings plans are being given more emphasis because of people's worries over the soundness of the social security system. But because taxable income is lowered, lower taxes also are paid—including lower social security taxes. So the widespread adoption of salary-reduction plans would mean a significant reduction in money put into social security, weakening that system even more.

company retirement plans, to give full retirement based on a "magic formula." Most frequently used is any combination of age and service equaling 85. Union Carbide, for example, adopted a rule of 85 in 1976, adding it as an alternative to the previous criteria of 62 years of age and 10 years of service, 60 and 30, or 65 years of age. Since then, the company says, its average retirement age has declined, and only 0.1% of its employees are older than 65.

By and large, when employees choose to work past the age of 65, they do so because of fears of inflation and because of concerns about social security. Then the question becomes whether the company continues to credit the years worked for calculating retirement benefits—and probably half of all companies don't. Some companies use the post-65 benefit freeze as a de-facto means to encourage retirement at age 65. But as the baby-boom cohort moves through the system toward retirement—or early retirement—that sort of thinking may have to change. The succeeding generation simply will not be large enough to fulfill workplace demands.

Companies with generous early-retirement programs may lose employees who set off for second careers, or even for second jobs with competitors. An employee aged 55, for example, could embark on a second career and be fully vested in a second pension by age 70. Companies may have to drop early-retirement programs to develop, instead, programs inducing older workers to stay on. These programs could include part-time employment of older workers, retraining of older workers, or adoption of the concept of phased-in retirement, suggest benefits consultants at Towers, Perrin, Forster & Crosby, of New York City, in a recent backgrounder on the implications of proposed social security changes.

In fact, they add, industry well may see emerge a concept of highly subjective retirement ages, ranging from the late fifties to the early seventies. "If retirements become spread over such a wide range, it will become increasingly difficult to maintain a plan predicated on the majority of employees retiring at age 65," they point out.

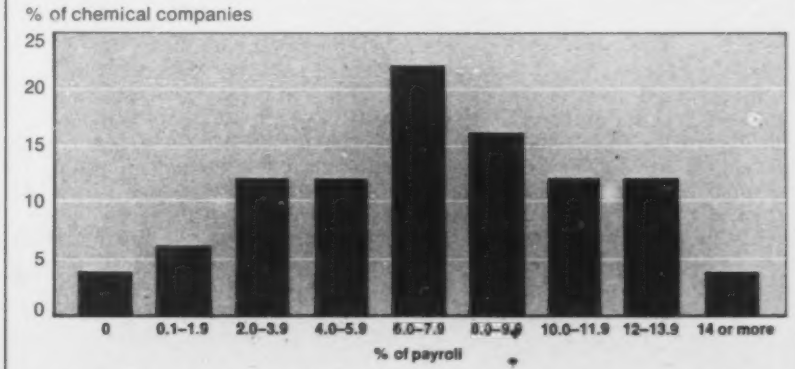
That's in the future, however. For now, pension plan managers are concentrating on coping with present-day plan administration and regulations. No one suggests repeal of ERISA. There were abuses before its passage, pension planners agree, but ERISA has made contributions toward stabilizing pension planning. High on the wish list is the need to simplify, or streamline pension regulations, particularly paperwork.

Chamber of Commerce's Romig, for example, estimates that some 80% of all the reporting required of pension-plan managers could be eliminated. That would be especially so, he believes, if there were a single federal agency to regulate employee benefits. "We'd have a lot less, but more coherent, regulation imposed on us," he suggests—albeit at the risk of an all-powerful superagency.

One employee-benefits attorney suggests that reducing the number of "parties of interest"—people or companies a pension fund can't invest in because of possible conflict of interest—would simplify things, especially for large companies buying from a host of suppliers, selling to a host of markets, and so on. "If our company pension plan invested in a hotel, we employees couldn't even stay there," he grumbles.

Among the wishes least likely to be fulfilled is that the federal government become subject to all employee benefit laws that have been imposed on the private sector, including social security. If this wish actually came about, says one human-resources manager, "We'd have a much more understanding Congress and federal bureaucracy." □

Two thirds of chemical firms in survey paid more than 6% of payroll for pensions



Source: U.S. Chamber of Commerce survey, 1980

Developing nations boost chemical exports

With chemical exports rising faster than in industrialized countries, developing nations are destined to play bigger role in international trade

Earl V. Anderson
C&EN, New York

During the 1970s, chemical exports from developing countries grew faster than those from industrialized nations. As a result, the developing areas of the world were able to increase their share of world chemical exports 39%.

That may come as little consolation to many developing countries, especially the poorer, oil-importing nations that still are suffering increasing current account deficits as a result of high oil-import bills. But the fact that developing countries were able to outperform the major, industrialized countries in chemical exports during the seventies underscores the increasingly important role that the so-called Third World has played in international chemical trade. And it also hints at the still bigger role that these countries are destined to play as the 1980s unfold.

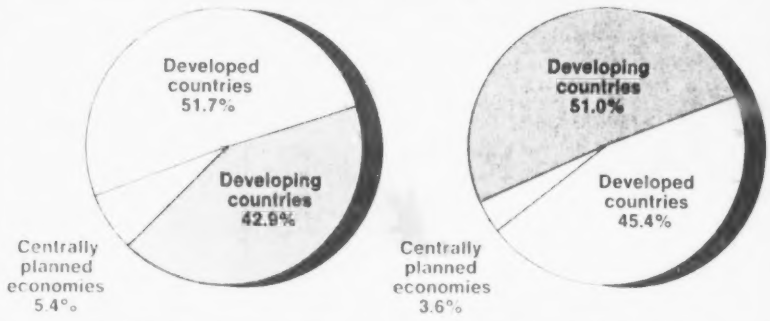
According to a recent analysis of world trade for 1970–80 compiled by the United Nations, world chemical trade (measured as exports) grew more than sixfold in that time span, from $22 billion to more than $147 billion. On both a volume and value basis, the major industrialized countries—in Europe, the U.S., and Japan especially—accounted for the bulk of the increase. And even in 1980, these countries maintained an overwhelming share, 87.5%, of world chemical trade.

But during the seventies, chemical exports from developing countries grew at an average annual rate of 24.8% per year, faster than those from the industrialized countries. By 1980, their combined chemical exports had reached a value of $9.5 billion, raising their share of world chemical trade to 6.4%, from 4.6% in 1970.

The growth in developing

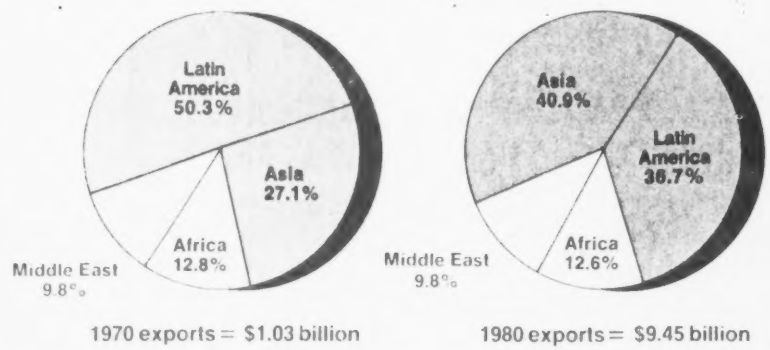
Developing countries are own best export customers

Chemical exports of developing countries to . . .



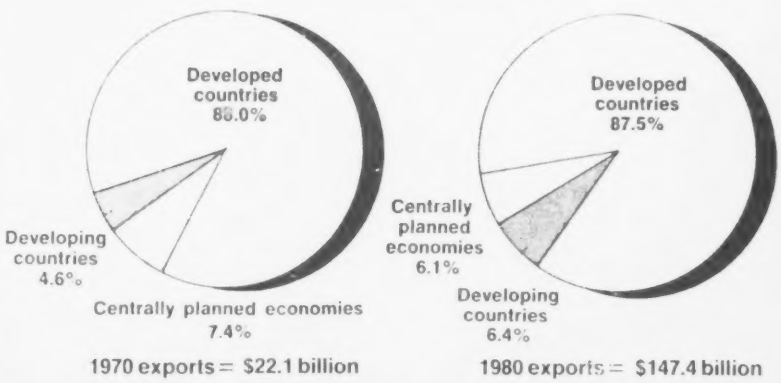
Latin America, Asia are leading chemical exporters

Chemical exports of developing countries from . . .



Developing countries increase share of world exports

World chemical exports



Source: United Nations

Europe is the largest industrialized importer of chemicals from developing countries

Destination	Developing countries' chemical exports to developed countries		Developing countries' chemical exports to developing areas		Average annual growth, %
	$ Millions	Per cent	$ Millions	Per cent	
Europe	$262	50.4%	$1754	41.8%	20.9%
Republic of South Africa	6	1.2	35	0.8	19.3
Canada	3	0.6	36	0.9	28.2
U.S.	148	28.5	1049	25.0	21.6
Japan	66	12.7	1104	26.3	32.4
Australia/New Zealand	35	6.7	215	5.1	19.9
TOTAL	**$522**	**100.0%**	**$4193**	**100.0%**	**23.2%**

Source: United Nations

Asia tops developing areas as importer of developing country chemicals

Destination	Developing countries' chemical exports to developing areas				Average annual growth, %
	$ Millions	Per cent	$ Millions	Per cent	
Africa	$ 39	9.0%	$ 334	7.1%	23.9%
Latin America	171	39.6	1479	31.4	24.1
Middle East	35	8.1	623	13.2	33.4
Asia	185	42.8	2264	48.0	28.5
Oceania	2	0.5	12	0.3	19.6
TOTAL	**$433**	**100.0%**	**$4713**	**100.0%**	**27.0%**

Source: United Nations

countries' share of chemical exports came primarily at the expense of communist nations, or centrally planned economies, as the UN calls them. Chemical exports in these countries grew more slowly than those of any other area of the world during the seventies. As a result, their share of total chemical exports slipped to only 6.0% in 1980 from 7.4% in 1970.

Among the developing areas of the world as defined by the UN, Asia has emerged as the leading chemical-exporting area. Between 1970 and 1980, Asia's chemical exports grew an impressive 30% per year, reaching $3.9 billion, or almost 41% of all chemical exports from developing countries.

One reason for Asia's success in chemical trade is that the continent contains four of the so-called "newly industrialized countries." The Republic of Korea and Taiwan both boast substantial chemical industries and, along with Singapore and Hong Kong, accounted for 53% of developing Asia's chemical exports in 1980. Japan and developing Asia itself are the major markets for these products.

Latin American developing countries' share of chemical exports from the entire developing world, meanwhile, fell to 36.7% in 1980 from 50% in 1970. The decline in chemical export share, however, is more the result of Asia's impressive performance than it is a poor showing on the part of developing countries in Latin America.

Chemical exports from developing

Much of Latin America's chemical exports stay within the region

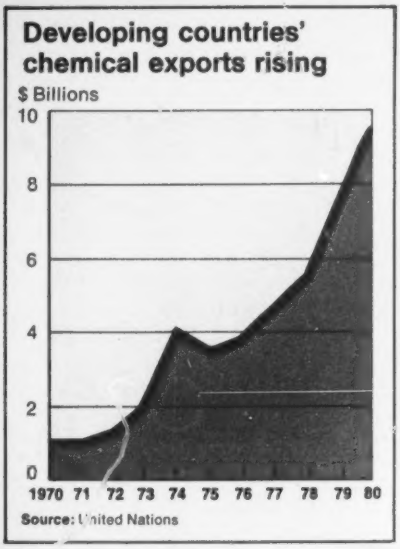
Destination	Latin America's chemical exports				Average annual growth, %
	$ Millions	Per cent	$ Millions	Per cent	
Developed countries	**$325**	**100.0%**	**$1864**	**100.0%**	**19.1%**
Europe	160	49.3	791	42.5	17.3
South Africa	3	1.0	28	1.5	25.0
Canada	3	1.0	21	1.1	21.5
U.S.	127	39.2	838	45.0	20.8
Japan	14	4.3	138	7.4	25.7
Australia/New Zealand	17	5.2	47	2.5	10.7
Developing countries	**$176**	**100.0%**	**$1545**	**100.0%**	**24.3%**
Africa	2	1.1	61	3.9	40.7
Latin America	166	94.8	1310	84.8	22.9
Middle East	1	0.7	122	8.0	61.5
Asia	6	3.4	50	3.2	23.6
Oceania	0	0	2	0.1	—
Centrally planned economies	**$ 13**	**100.0%**	**$ 40**	**100.0%**	**11.9%**
Asia	6	46.2	9	22.5	4.2
U.S.S.R.	0	0	11	27.5	—
Other Europe	7	53.8	20	50.0	11.1
Developed countries	**$325**	**63.3%**	**$1864**	**54.0%**	**19.1%**
Developing countries	**$176**	**34.2%**	**$1545**	**44.8%**	**24.3%**
Centrally planned economies	**$ 13**	**2.5%**	**$ 40**	**1.2%**	**11.9%**
TOTAL	**$515**	**100.0%**	**$3470[a]**	**100.0%**	**21.0%**

a Figures do not add because of UN statistical procedures. Source: United Nations

Japan is big importer of developing Asia's chemicals

Destination	Developing Asia's chemical exports				Average annual growth, %
	$ Millions	Per cent	$ Millions	Per cent	
Developed countries	**$ 82**	**100.0%**	**$1556**	**100.0%**	**34.2%**
Europe	20	24.2	208	13.4	26.4
South Africa	1	1.2	6	0.4	19.6
Canada	1	1.2	14	0.9	30.2
U.S.	14	17.1	200	12.9	30.5
Japan	38	45.3	960	61.7	38.1
Australia/New Zealand	8	9.8	167	10.7	35.5
Developing countries	**$186**	**100.0%**	**$2027**	**100.0%**	**27.0%**
Africa	14	7.6	111	5.5	23.0
Latin America	2	1.1	21	1.0	26.5
Middle East	8	4.3	164	8.1	35.3
Asia	160	86.5	1722	85.0	26.8
Oceania	1	0.5	9	0.4	24.6
Centrally planned economies	**$ 9**	**100.0%**	**$ 106**	**100.0%**	**28.0%**
Asia	0	0	81	76.4	—
U.S.S.R.	7	77.8	22	20.8	12.1
Other Europe	2	22.2	3	2.8	4.2
Developed countries	**$ 82**	**29.6%**	**$1556**	**42.3%**	**34.2%**
Developing countries	**$186**	**67.2%**	**$2027**	**54.8%**	**27.0%**
Centrally planned economies	**$ 9**	**3.2%**	**$ 106**	**2.9%**	**28.0%**
TOTAL	**$278**	**100.0%**	**$3869[a]**	**100.0%**	**30.1%**

a Figures do not add because of UN statistical procedures. Source: United Nations



Latin American countries, in fact, grew an impressive 21% per year during the 1970s, hitting almost $3.5 billion in 1980. Brazil and Mexico also rank among the leading newly industrialized countries, and, together, these two nations exported more than 40% of 1980's total chemical exports from Latin American developing countries.

Argentina and Venezuela, of course, are other leading chemical exporters in the area.

More surprising is Trinidad and Tobago, which chipped in with $110 million in chemical exports in 1980.

Where chemical exports go is as important as where they come from. And, based on the UN analysis, it's obvious that the developing nations themselves are becoming their own best customers—at least as far as chemical trade is concerned.

The industrialized countries of the western world still are important customers for developing countries' chemicals, but not so important as they used to be. In 1970, they bought more than half the chemical exports from developing countries; by 1980, that share had dropped to 45%.

Meanwhile, the volume of chemical trade that remained with developing areas increased to $4.7 billion in 1980 from $433 million in 1970. That's a hefty 51% of the total.

As an outlet for chemicals from the developing world, the record of centrally planned economies is much less impressive. Their imports from developing countries increased only 20% per year, almost five percentage points below the world average. And their share of the total dropped to a meager 3.6% in 1980 from 5.4% in 1970. □

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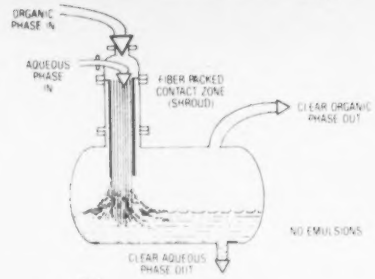

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Chemical & Engineering NEWS

Thermosets market is still plunging
A Key Polymers Review
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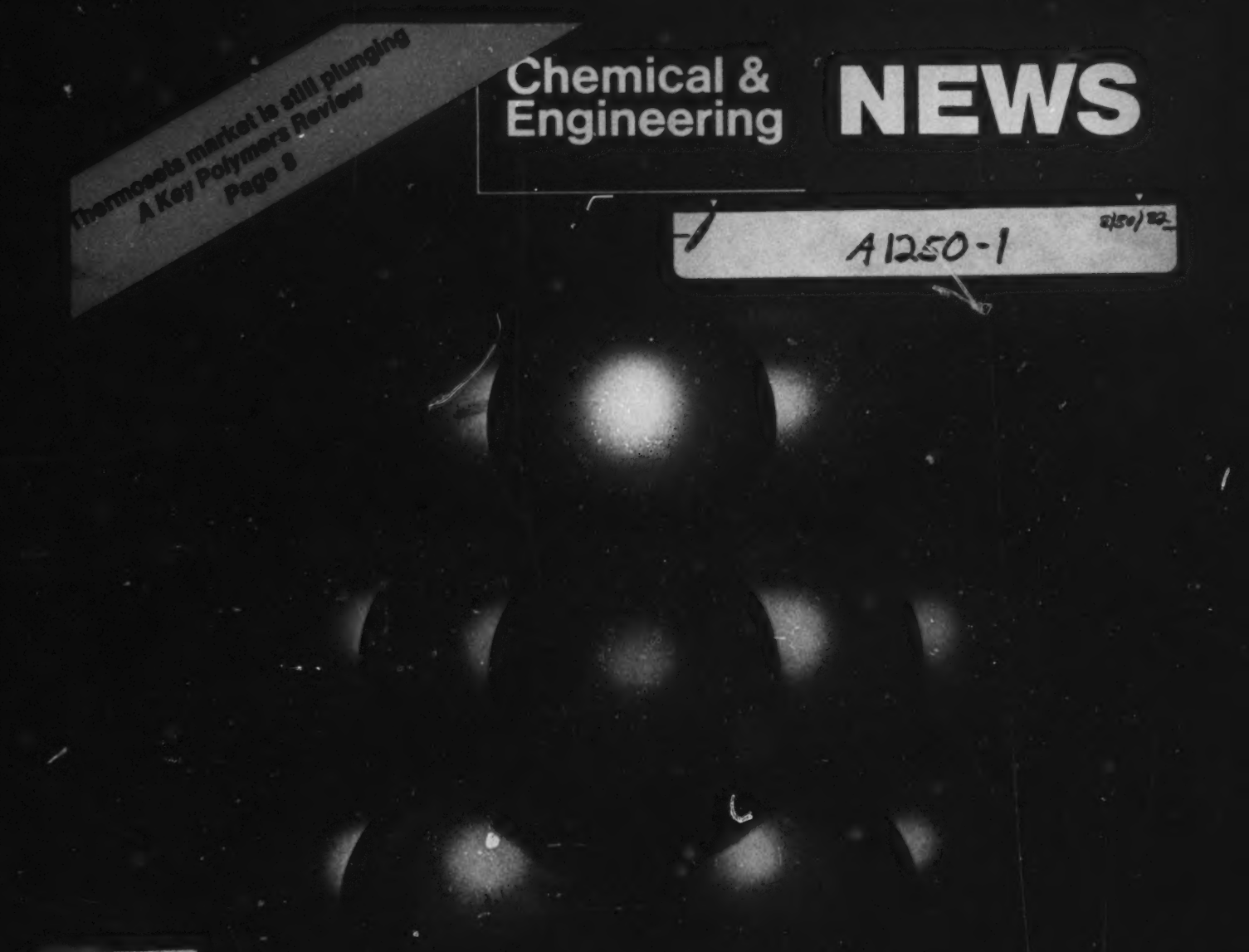

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METAL CLUSTERS

A perspective on their structure and diversity
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August 30, 1982
Volume 60, Number 35
CENEAR 60 (35) 1–60
ISSN 0009-2347

Chemical & Engineering NEWS

Cover: Rhodium atoms in the metal carbonyl cluster ion $Rh_{22}(CO)_{37}^{4-}$ form a highly symmetric framework; colors depict various layers of rhodium atoms

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Study of metal clusters—*bridge between atoms in molecules and those in more extended arrays—has grown considerably since boron research of 1950s.* ***Page 28***

ACS News

- ***A record 10,000 new members*** *joined the society this year, bringing total membership above the 125,000 mark.* ***Page 42***
- ***Analytical Chemistry Division*** *again sponsors summer intern program.* ***Page 42***
- ***ACS honors winners*** *of international science fair; high school students from Korea, Taiwan, U.S. take top prizes.* ***Page 42***